

We claim:

1. A method for forming a bond, in a heat transfer device,  
between a tube and a header having a generally circular opening  
having a first predetermined diameter formed on a first side  
5 thereof for receiving one end of said tube, said method  
comprising the steps of:

- 10 a) providing at least one generally circular end  
having a second predetermined diameter on said tube  
to fit into said generally circular opening of said  
header;
- b) inserting said one end of said tube into said first  
side of said header; and
- c) forming a bond between said one end of said tube  
and said header.

15

2. The method of claim 1 wherein said tube is a coolant  
tube having a generally oblong cross section.

20 3. The method of claim 1 wherein said header contains a  
plurality of generally circular openings.

4. The method of claim 1 wherein said heat exchanger  
includes one of a CT and a Serpentine fin core.

5. A method for forming a bond between a coolant tube having a generally oblong cross-section and a header member of a heat exchange device, said header member having a predetermined plurality of generally circular openings, having a first  
5 predetermined diameter, formed therein in one of a CT and a serpentine fin configuration, said method comprising the steps of:

- 10 a) shaping one end of said tube to change said generally oblong cross-section of said tube at said one end into a generally circular cross section having a second predetermined diameter;
- b) inserting said one end of said tube into one of said predetermined plurality of generally circular openings formed in said header member on a first  
15 side thereof; and
- c) forming a bond between said one end of said tube and said header member.

6. The method of claim 5 wherein step (c) includes forming  
20 said bond mechanically.

7. The method of claim 6 wherein said bond is formed mechanically by rolling said tube into said generally circular opening in said header member.

8. The method of claim 5 wherein step (b) includes inserting said one end of said tube into said one of said predetermined plurality of generally circular openings formed in said header member until it extends at least through a thickness  
5 of said header member.

9. The method of claim 8 wherein said method includes the additional step of removing any excess portion of said tube which extends above a second side of said header member after  
10 step (c).

10. The method of Claim 5 wherein step (a) includes the step of inserting an internal sizing tool having a generally circular cross section into said one end of said tube.  
15

11. The method of claim 10 wherein step (a) includes the step of shaping an outer surface of said one end of said tube with an external sizing tool having a generally hollow circular cross section.  
20

12. The method of claim 5 wherein said method includes the additional step of forming threads in a surface of each of said predetermined plurality of openings formed in said header member.

13. The method of claim 5 wherein said method further includes the step of forming said openings in said header member in a staggered arrangement.

5        14. The method of claim 5 wherein said method further includes the step of the forming said openings in said header member in substantially parallel rows.

10        15. The method of claim 5 wherein said first predetermined diameter is slightly larger than said second predetermined diameter.

16. The method of claim 5 wherein step (a) includes using an adhesive in forming said bond.

15

17. In combination with a coolant tube having a generally oblong cross-section and a header member in a heat transfer device having one of a CT and a serpentine fin configuration, the improvement comprising:

- 20        a) one end of said coolant tube having a generally circular cross section having a first diameter;
- b) a circular opening in a first side of said header having a second diameter through which said generally circular end of said tube extends so as

to be approximately flush with a second side of  
said header opposite said first side; and

c) a mechanical attachment between said tube and said  
header.

5

18. The combination of claim 17 wherein said opening is one  
of a plurality of openings arranged in substantially parallel  
rows.

10

19. The combination of claim 17 wherein said opening  
further is one of a plurality of openings arranged in staggered  
rows.